DAKOTA ZEPHYR

MAY, 1939 VOL. 4 NUMBER 2

Published by: The Soil Conservation Service Brookings, South Dakota

Ross D. Davies
State Coordinator

Ralph E. Hansen
Extension Soil Conservationist

* * * * * *

Dear Cooperator:

Wind Stripping Prevents Dust Storms

Wind strip cropping proved to be an effective and economical method, during the past season, of controlling soil drifting on the farms of Soil Conservation Service cooperators, according to reports received by Dan E. Cass, Project Manager, Winner.

Strip cropping consists of growing alternating strips of row crops and grain crops in the same field. The strips are approximately 20 rods wide, and the adjoining strips are not cultivated and seeded at the same time. A cover, including crop stubble, is maintained on the adjoining strips until the new crop is established. In this way only narrow strips are exposed to the action of the wind at any given time.

Wind erosion was very severe during the past year because of the low amount of moisture, the large number of high winds blowing from the northwest during March and April, and the existence of bare fields caused by grasshopper damage to corn fields the previous year.

Considerable soil movement took place on the large bare fields over the project that were not strip cropped and had been made bare by the grasshoppers. Similar bare fields in strips did not cause any appreciable damage because the soil movement was checked by the adjoining grain strips and very little damage occurred.

* * * * * * * * * *

Roadside Erosion Control Activities

Roadside erosion control projects are placed in effect on county and township highways which are adjacent to land under cooperative agreement with the Service. This means that the highway erosion control work is carried out in cooperation with the respective highway officials, county or township, and the adjoining land owner who has erosion control practices in effect on his farm.

The first roadside erosion control project designed by the Soil Conservation Service Camp at Alcester has now been completed and work on the highway begun.

This project is being carried out in cooperation with Union County on their gravelled highway adjacent to the Seth Elliott farm twelve miles south and two miles east of Alcester. It consists of sloping of the bank, construction of a concrete drop culvert inlet, construction of a four-foot flat ditch section to carry runoff water without causing erosion and the grassing of the bank and ditch.

The use of the drop inlet will eliminate the erosive action of the water to such an extent as to make the vegetative channel effective in preventing further gullying in the road ditch and subsequent damage to the highway itself.

The sloping of the bank and its seeding to grass will aid in preventing the formation of gullies extending from the highway into the adjoining farm land. The erosion control practices in effect on this adjoining farm land will further eliminate this hazard since it has been terraced and will be seeded to grass for pasture.

There are, at present, several other projects of this nature which will be completed during the coming year on various county and township highways in the camp area.

* * * * * * * * * *

Brule-Buffalo District Supervisors Approve Large Acreage For Work

Howard K. Schultz, Secretary of the Brule-Buffalo Soil Conservation District, announces that the Brule-Buffalo District Supervisors have approved agreements covering 19166 acres.

These agreements, as pointed out by Herman Viereck, Chairman of the Board of Supervisors, provide for the following practices and developments:

Five thousand three hundred seventy-one acres strip cropping, 493 acres contour cropping, 8,788 acres controlled grazing, 168 acres contour furrows, 11 dams and dugouts, 6,943 rods of fence salvaging, 4,377 rods of fence construction, 111 rods water spreaders, 80 rods of dikes, 3 springs to be developed, 810 acres reseeded to grass, 489 acres supplemental pasture, 2 diversion terraces, 2 diversion dams, 4 gully control dams, and 225 acres rodent control. The rodent control phase will be carried out by the Extension Service through the Biological Survey. Several acres of trees are being planted as a part of the district program, and technical assistance will be given those planting trees under the Agricultural Conservation Program.

Mr. Schultz states that in order for farmers in the District to take advantage of the technical assistance available, it is necessary for them to enter into a cooperative agreement with the District. It is also necessary to have this cooperative agreement if assistance is made available by the CCC Camp of which Taylor S. Solem is Superintendent.

* * * * * * * * *

Ranchers Interested in Water Spreading And Flood Irrigation in Faith Territory

Ranchers in western South Dakota will have a much better opportunity to produce feed crops, alfalfa, and grass on bottom and other level lands if a movement toward flood irrigation and water spreading now being started continues to develop. A growing desire among ranchers for some means of getting additional water on bottom and other level lands took form a few years ago in the establishment of dams and water spreading systems by far-sighted ranchers and various government services.

Last summer a small water spreading system was constructed on the Ed Hall ranch northwest of Faith under the supervision of the technicians of the Tri-County Soil Conservation District. Similarly, a number of combin-

ation stock water dams and water spreading systems and flood irrigation systems are being constructed on the H. C. Boke ranch south of Faith.

Recently a unique flood irrigation system was constructed on some bottom lands on the B. Datin ranch north of Faith. Dikes and ditches were constructed in the mouths of creeks and streams which led to bottom lands, conserving the flood water and causing it to be evenly distributed over the bottom lands. Ed Delehan is constructing a similar system of flood irrigation on the bottom lands on his ranch northeast of Faith. David R. Miller and Michael Fischbach have also recently become very much interested in this practice and will likely develop some spreader systems on their ranches in the future.

* * * * * * * * *

Fall Seeding of Grass Mixture Makes Good Showing

Harmon Heitland living one-half mile north of Wolsey, a cooperator in the Wolsey-Shue Creek Project located at Huron, South Dakota, is very proud of his field of grass mixture planted late in October 1937. This mixture consisted of Western wheatgrass, brome, crested wheatgrass, slender wheatgrass and sweet clover. The seeding was made with a deep-furrow drill at the rate of ten pounds to the acre. The field had been summer-fallowed in 1937 but was not as firm at the time of planting as was desirable. This field is on an east slope which gave it considerable protection in 1938 and aided in accumulating snow during the winter.

A large number of plants produced seed in 1938 and this seed was allowed to shatter to reseed and thicken the stand. Mr. Heitland says he will use this field for the production of hay for a few years in order to have the stand well established before incorporating it into his pasture.

* * * * * * * * *

Perennial Grasses Are Growing Satisfactorily

Perennial grasses seeded late last fall on a number of farms in the Brown-Marshall Soil Conservation District are making satisfactory progress according to Rex Bankert, Assistant Agronomist, on the District. Mr. Bankert comments, "While it is difficult to make positive statements concerning stands of crested wheatgrass, brome grass, and other perennial grasses until the second year of their growth, it has been shown that if the seedlings have an opportunity to become well rooted before the onset of heat, drought, and grasshoppers they will survive."

On the Marshall County farm being restored to grass by the Brown-Marshall Soil Conservation District and on the farms of W. L. Graf, Anton Fangen, and F. L. Farrar, seedings of crested wheatgrass made last fall are now breaking through the soil. Good vegetative cover of stubble and weeds on these fields have done much and will continue to do much to insure survival of the seedlings. Snow was held for moisture and the small new plants will be protected from desiccating winds.

Some degree of success was obtained in stabilizing shifting soil by the seeding of rye last fall. If the advantage secured is followed up by listing in sorghums about June 1 and moisture conditions are favorable, some very badly blown sandy soil will be stabilized.

* * * * * * * * *

The Clearfield-Keyapaha Soil Conservation District has constructed a grass seed stripper to be used in collecting native grass seed. The District is also using a reforestation machine which can plant almost as many trees in a day as 20 men could by hand. The biggest day's work for this machine was 7,000 trees.

* * * * * * * * * *

Snow Runoff Put to Good Use

The runoff water from melting snow was put to good use this spring on the Clarence Johnson farm, 12 miles northeast of Sturgis.

Mr. Johnson has his farm under agreement with the Soil Conservation Service, and technicians from the CCC Camp at Fort Meade laid out the work on the farm. A full program of soil and moisture conservation practices is carried on. A stock dam, located on a draw in one of his pastures, has provisions installed for the utilization of overflow water in a water spreading system. This dam and the spreader dikes and ditches were built by the CCC boys last summer. The runoff water from melting snows this spring was spread over approximately 50 acres of range land. Water ran through the ditches for a week during the first thaw and most of it soaked into the ground.

* * * * * * * * *

Alfalfa Grown Despite Hazards

Adequate and timely cultural practices will go a long way toward getting a stand of alfalfa, according to A. F. Ehrlich of Colome, who is a cooperator on the Winner-Dixon Project. In spite of drouth and 'hoppers, he has a 100 percent stand field of alfalfa.

This field of 10 acres was seeded to alfalfa in the spring of 1937 after it had been fallowed in 1936. Prior to the seeding completed May 10, the field was disked to secure a good seedbed. Seeding was done with a lister type deep-furrow drill at the rate of eight pounds per acre.

In 1937 no crop was harvested. In 1938 a yield of one ton of hay per acre was secured. Due to dry weather and 'hoppers no second crop was taken. A check, made in April of this year, indicated that there was no winter killing.

In the opinion of Mr. Ehrlich, one of the main practices which contributed to securing a continuing stand is early harvest of the hay crop. By so doing, the plants have an opportunity to produce sufficient new growth while moisture is available and before 'hoppers become a menace. The early cutting reduces the yield of hay, but this is of minor importance.

Other factors which Mr. Ehrlich thinks are important include firm seedbed and timely seeding. Since the seed is so small, it is necessary that it be planted while the topsoil is moist. Many failures can be attributed to deep seeding and seeding in loose, dry soil. Seeding as soon as possible after a good rain is usually better than just before a rain. Too often a crust forms following a rain which prevents the seedling from emerging.

* * * * * * * * *

Conservation Aids Income

In a comparative study designed to measure the effect of conservation practices in the LeRoy, Ill., Soil Conservation project area, where farm records have been kept for the past three years, 30 farms cooperating with the conservation program were matched with an equal number of noncooperating farms on the basis of number of acres, soil ratings, proportions of land tillable, and land valuation. * * * Cooperating farms in 1935, the first year the program was under-way, had an advantage in net income of $372 per farm and this advantage increased to $681 a farm for the year 1937. To date the farm record shows clearly that a planned program of soil conservation and erosion control not only makes possible higher farm income but also provides for maintenance and improvement of soil resources and farm improvements, hence adds to the capital assets of the farm. -- Illinois Farm Economics, University of Illinois, January, 1939.

* * * * * * * * *

Observation Grass Plots Established

In September 1938 the CCC Camp at Alcester established an observational grass test plot on the Axel Johnson farm three miles east of Alcester in which 17 different varieties of grass and a pasture and meadow mixture are being tested. These grasses which include both native and introduced species are being tested for adaptation and ability to maintain a satisfactory vegetative cover under actual use by livestock.

The soils of the Alcester area are largely wind laid and the topography is rolling. These soils when left unprotected are subject to sheet and gully erosion. Many permanent pastures in this area have been completely killed out during the past few years. There is an urgent need in this part of the state for a perennial grass that can be used for pasture or hay and which at the same time will rebuild and maintain the structure and fertility of the soil.

These plots were established to determine the best grasses for and the most practical method of establishing a satisfactory vegetative cover on depleted and eroded pasture land in the extreme southeastern part of South Dakota.

This plot is located on a badly depleted bluegrass pasture. The slope of the area is 9 percent. This site was selected because it is similar to conditions prevailing on many farms in this area.

* * * * * * * * *

Emmett Healy of Pukwana, a cooperator in the Extension Demonstration farm program, states that his pasture furrows are completely sodded over at this time. The furrows, which are two years old, have a good covering of Western wheatgrass.

* * * * * * * * *

Wildlife Exhibit Established

A wildlife exhibit at the State Fair Grounds in Huron is being established by the CCC Camp located there. One of the main features of the display has been to establish typical wildlife surroundings for a large group of aquatic and upland game birds. There are a large number of Canada geese, blue geese, snow geese, pheasants, ducks, doves, eagles, deer, and red foxes. Additions to the exhibit are being brought in almost daily. The City of Huron, State Fair Board, and the State Fish and Game Department are cooperating with the Soil Conservation Service in this enterprise.

* * * * * * * * *

Ranchers in Faith Territory Discuss Conservation

Ranchers located in the six northeastern townships of Meade County included in the Tri-County Soil Conservation District and Faith businessmen studied conservation problems during meetings held at the homes of Nels Orvedahl and Alvin Anderson, at the Turtle Creek School, County Agent's Office, and the West Hotel.

Among the many problems discussed were the organization, use, and possibilities of the Tri-County Soil Conservation District in promoting water and soil conservation in a range area. The charts showed that in the vicinity of Faith the average annual rainfall was from 14 to 16 inches and that this area was frequented with from 24 to 26 four-month drought periods.

* * * * * * * * *

There will be about 92 miles of trees planted in the Brown-Marshall District this spring. There will be approximately 900,000 trees planted on 101 different farms in the area.

* * * * * * * * *

Good Stand of Crested Wheatgrass In Beadle County

The crested wheatgrass seed plot on the Wm. Uselding farm 7 miles north and 3 miles west of Wolsey shows an exceptionally good stand. The grass is four to six inches tall at this time (April 20) in spite of the late spring.

This plot of about 7½ acres was planted first in the spring of 1937 in grain stubble, but only a scattered stand was secured. The field was replanted on March 19, 1938 with a deep-furrow drill using 8 pounds of seed to the acre. There was a sparse covering of tall weeds of 1937 growth at the time of seeding. The soil was in firm condition.

Mr. Uselding states that he will harvest the seed and use it on other fields of his farm in 1939. He expects to have some seed to sell to his neighbors in the future.

* * * * * * * * *

Sorghum Replaces Corn for Wind Erosion Control

The experience of farmers on the Winner-Dixon Project during the past year indicates sorghums are superior to corn in controlling and preventing wind erosion. Sorghums not only out-yielded the corn in grain and forage but also produced a rank growth which, when cut from 12 to 18 inches high, provided a large amount of crop residue. This proved very effective in preventing soil movement last winter and this spring under rather severe conditions.

Sorghums were also more immune to grasshopper damage when used in strip cropping. In many instances, under heavy grasshopper infestation, the loss on corn was nearly 100 percent, whereas the sorghum yields ranged up to 35 bushels per acre.

Strips of sorghum bordering the outside of corn fields were very helpful in protecting corn from grasshopper damage if the grasshopper infestation was not too severe. However where severe grasshopper infestation occurred, especially through migration, the advantage of such strips was not so apparent. The damage to the corn was very severe while the sorghum damage remained slight. This demonstrated the decided preference of the grasshoppers for the corn over the sorghum.

* * * * * * * * *

First Water Facility Demonstration Established

In Perkins County Mr. H. F. Thompson, who lives 13 miles northeast of Bison, has just completed one of the first demonstrations under the Water Facility Program. To Mr. Thompson and Perkins County, therefore, goes the distinction of having completed the first project of this type in the state.

Mr. Thompson operates over 5,000 acres in a livestock and feed crop unit. The purpose of this water facility is to flood irrigate approximately eighty-five acres of feed cropland from the drainage of Butcher Creek and several dry draws.

Technical assistance was furnished to Mr. Thompson by the Soil Conservation Service. Help of this type will be given for about four such demonstrations in each of ten selected counties. The purpose of this program is to demonstrate the possibilities in proper utilization of water through dams, spreader ditches, irrigation and other methods.

* * * * * * * * *

Uncontrolled water is one of the most destructive forces with which man deals.

* * * * * * * * *

Basic Surveys are Valuable Aid in Planning Farming Practices

A farmer asked the other day what all this talk about surveys meant. He said that he had heard talk about range, vegetative, soils, slope, erosion, conservation and other types of surveys. He said that it was not entirely clear to him just why all these surveys were made and how they were used. Here is in general the answer given him.

All surveys are made to enable the farmer to figure out the best land use practices for his farm or ranch. A soils survey shows the soil type and the degree of erosion and sometimes also the slope. If a farmer knows what kind of soil he has, knows how much of it has blown or washed away, and knows the slope of the fields, he has a good background to start planning a cropping system. If he finds that the soil is sandy he must farm so as to prevent wind erosion. If he finds the soil is a silt loam or clay, then he must take added precautions to prevent water erosion. The erosion survey will tell him just how much of his topsoil has already been lost by erosion and will give him warning as to precautions to take in the future. Then the slope survey will tell him how steep the fields are and will also show what fields need terraces or should be farmed on the contour.

The range and vegetative survey is the same and consists of a pasture check up to see what kinds of grasses are growing, how much grass there is and how much grazing the pasture will support. Pastures that are grazed according to the carrying capacity will become reestablished much faster and further erosion will be decreased.

These surveys are the first steps that Supervisors recommend in the soil conservation districts. From this information they are able to assist in planning complete farming operations. No conservation practice should be attempted without first knowing the problem. These surveys show the problem, and demonstration work done in other areas under similar conditions points to the correct solution. Just as a farmer would not start on a long trip without a good road map, he should not start on a conservation plan for his farm without the necessary basic information. A trip without planning or without a map will result in lost time, detours, and additional expense. A farming plan that does not take into consideration the basic facts about the soil and other physical characteristics will likewise result in erosion and the possibility of decreased yields and additional expense.

* * * * * * * * *

Did you ever hear of a plow that is taller than a horse and wider than a wagon? A plow that is heavier than five low-priced automobiles and requires five tractors to pull it?

There is such a plow in Southern California and it weighs seven tons and turns a furrow six feet deep and it can bury as much as four feet of sand. Five powerful tractors with a total of 400 horsepower pull it.

This plow is used on lowlands where flood waters have carried tons of silt and sand and dumped them on the bottom lands covering the fertile topsoil so deep that an ordinary plow cannot uncover it. In reclaiming this land this huge plow brings the fertile topsoil to the surface and the worthless soil is buried.

The mythical giant, Paul Bunyan, with his wonderful Blue Ox is said to have dug the Grand Canyon. But even Paul would admit that this is SOME PLOW.